



Data issues in Europe

From the EU to the German Aerospace Center

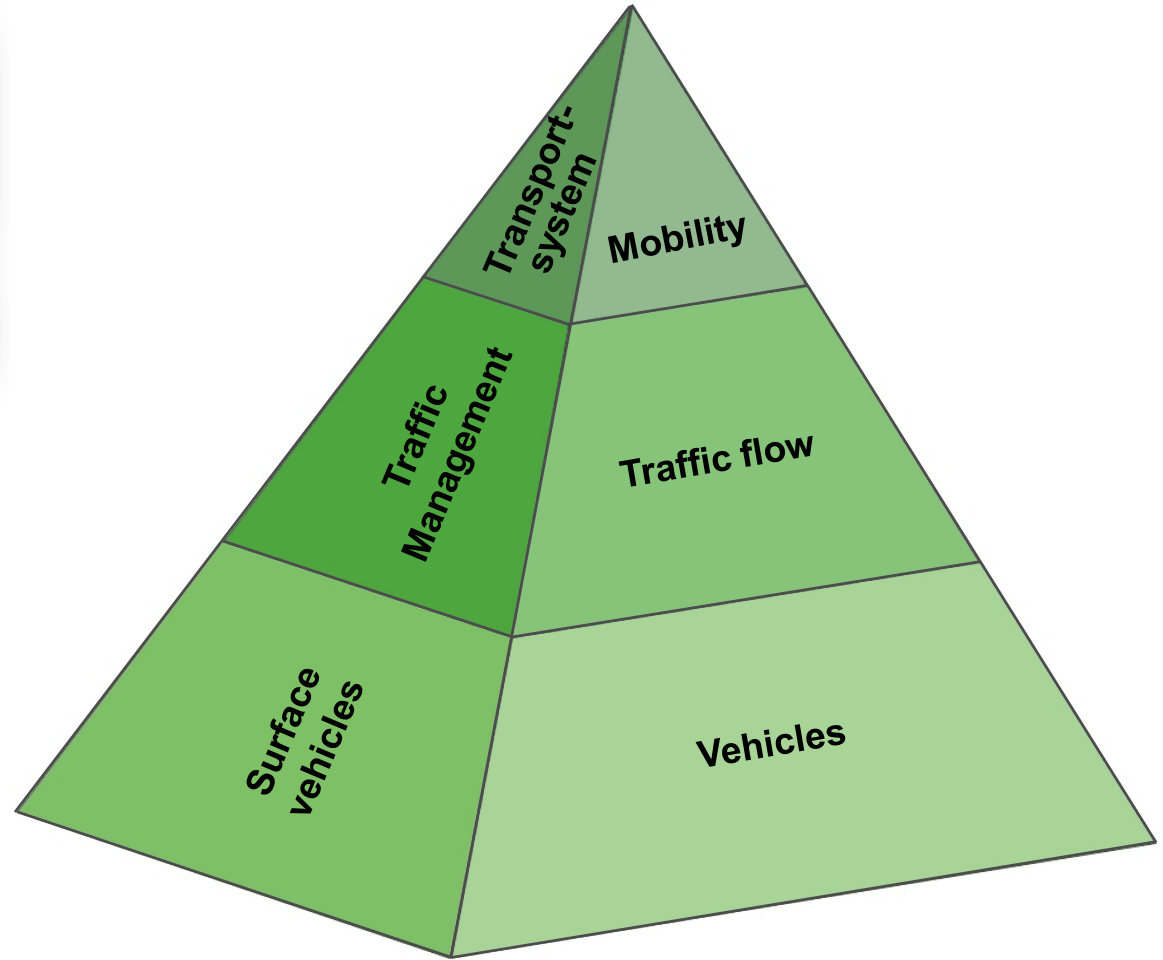
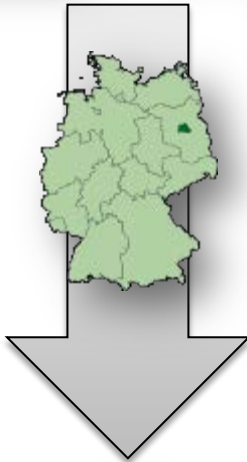
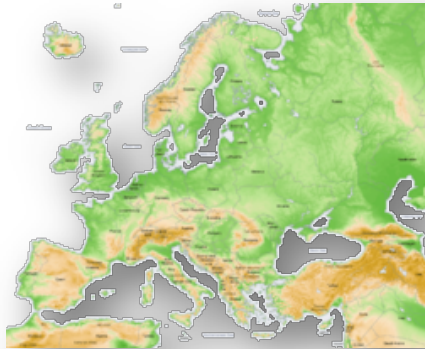
Axel Wolfermann

German Aerospace Center (DLR) – Institute of Transport Research



Deutsches Zentrum
für Luft- und Raumfahrt e.V.
in der Helmholtz-Gemeinschaft

Outline



Why Europe?

- Travelers and goods don't stop at legal borders
- Standardisation efforts are driven by the European Union

How does the EU foster standardisation?

- Communication
- Project funding
- Legislation



Let's make it specific...

Communication (1)

➤ COST

- European Cooperation in Science and Technology
- “One of the longest-running European instruments supporting cooperation among scientists and researchers across Europe.”

➤ COST Shanti

- Survey Harmonisation with New Technologies Improvement
- harmonizing national travel surveys
- concrete harmonization guidelines (protocol, questionnaire design, variables definition, etc.)
- survey knowledge dissemination



References

<http://www.cost.eu/>
<http://shanti.inrets.fr/index.php>
<http://inst.ifv.uni-karlsruhe.de/wiki-shanti/>



Let's make it specific...

Communication (2)

➤ MULTITUDE

- Methods and tools for supporting the Use caLibration and validaTion of Traffic simUlation moDEls European Cooperation in Science and Technology

References

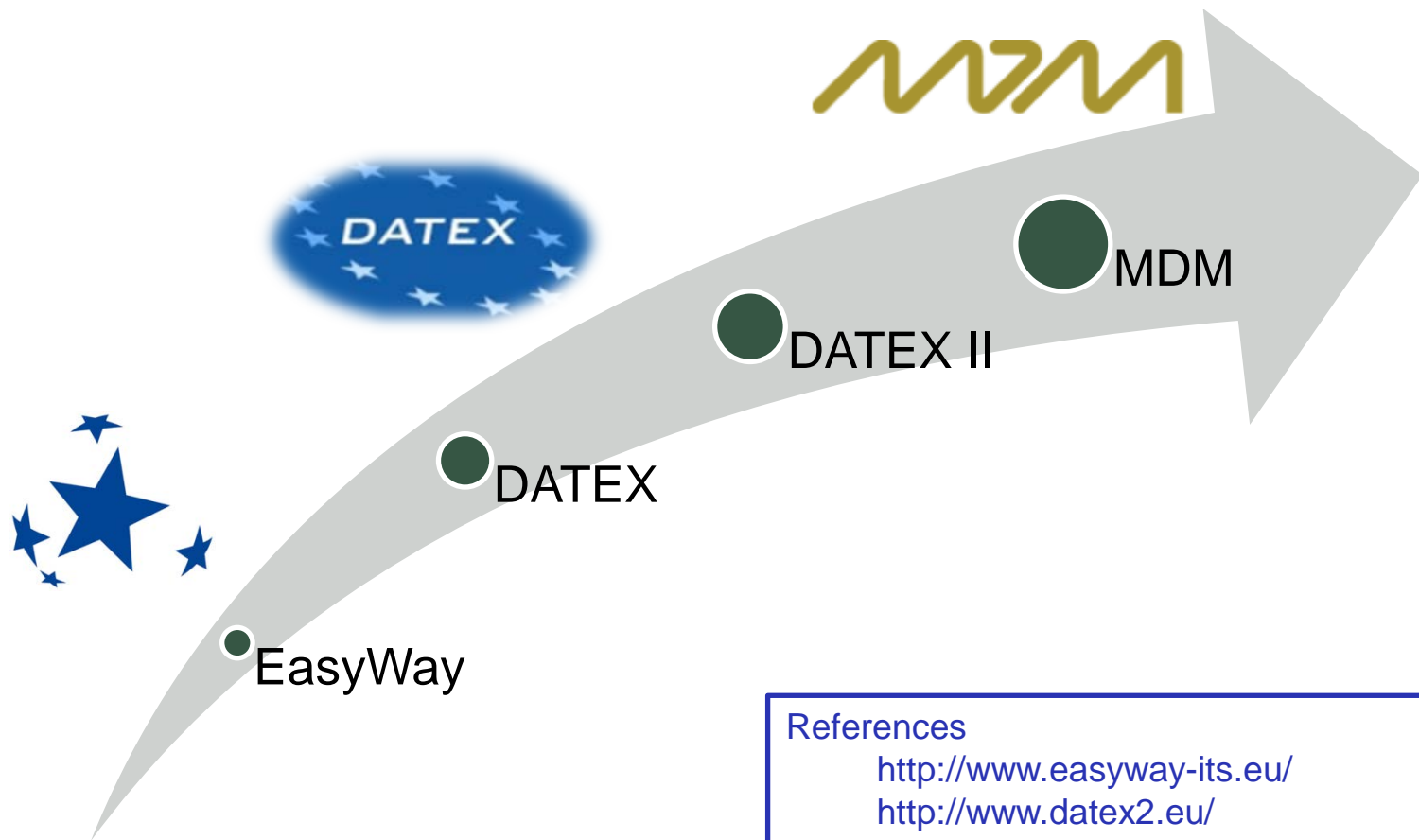
<http://www.cost.eu/>

<http://www.multitude-project.eu/>



Let's make it specific...

Project funding (1)



References

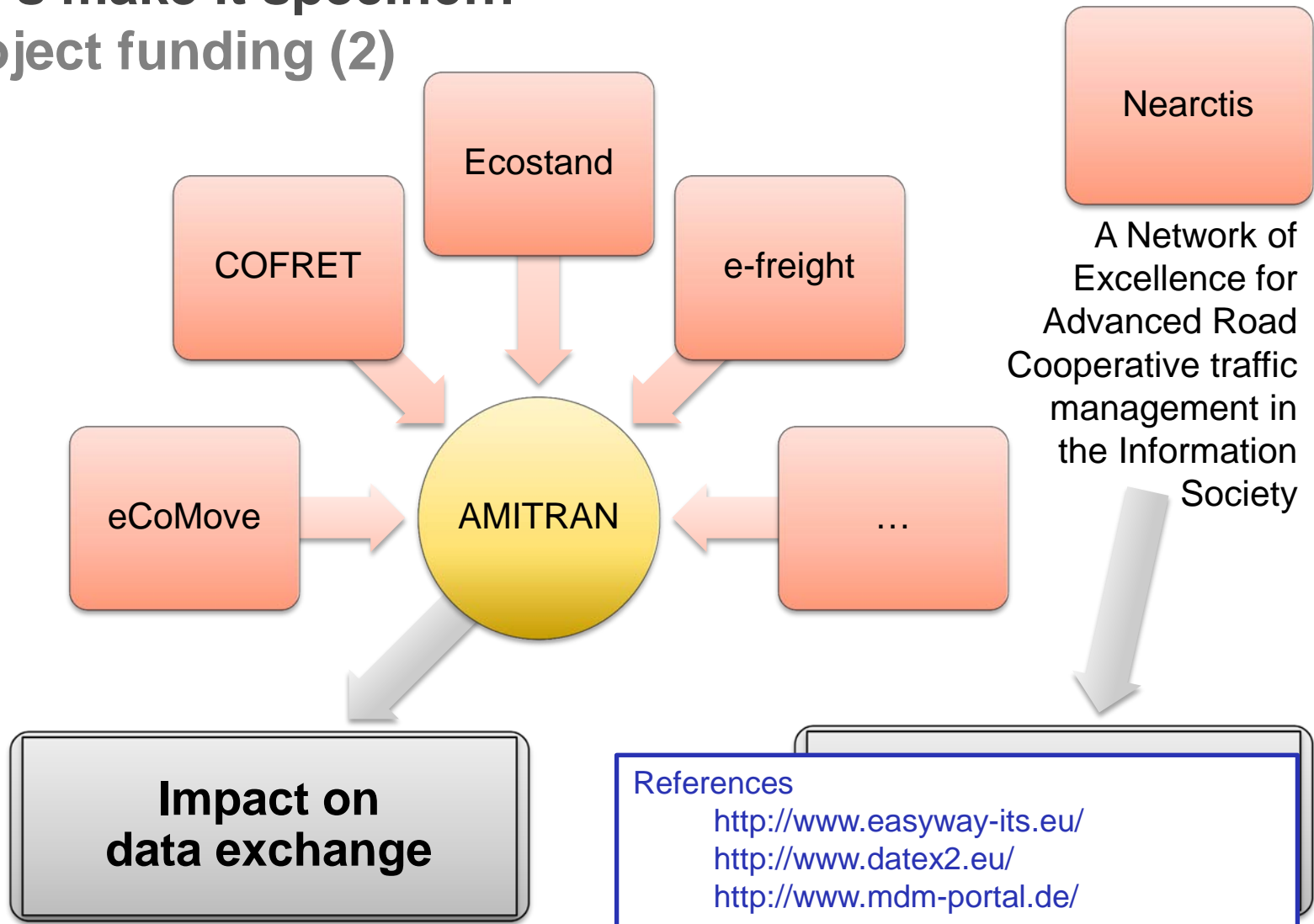
<http://www.easyway-its.eu/>

<http://www.datex2.eu/>

<http://www.mdm-portal.de/>

Let's make it specific...

Project funding (2)





Only the tip of the iceberg...

Selected FCD initiatives in Europe

- SINERGIT (Système d'information sur les déplacements par véhicule traceurs avec Galileo pour l'agglomération Toulousaine, 2006)
 - integrate traffic information from cellular phones to traditional measurement systems like GPS, fixed detectors or cameras
- Antwerp, Belgium (2004)
 - assess whether data collected from mobile phones (e.g. travel times) provided accurate traffic information
- TrafficOnline (2002-2005), Germany
 - innovative and worldwide portable and thus applicable system for the online detection of road traffic detection using phone data
- GALILEO
 - Higher accuracy for vehicle positioning expected
 - Galileo may allow FCD to become a much wider accepted data source

Sources: [Led08](#), [Schm05](#)





Only the tip of the iceberg...

And more European projects

- FRAME – Framework Architecture Made for Europe
 - ITS Architecture for Europe
- CVIS – Cooperative vehicle-infrastructure systems
 - unified technical solution for V2X communication, open application framework, open architecture and system concept, user acceptance, data privacy and security, risk and liability, public policy needs, cost/benefit and business models, and roll-out plans for implementation
- CADaS - The Common Accident Data Set
 - standardisation of road accident data

References

<http://www.frame-online.net>

<http://www.cvisproject.org>





Let's make it specific...

Legislation

European emission standards

- National laws

New sources of emission data

- existing sources inadequate

New measures

- environmental zones
- ...



European Committee for Standardization

- CEN/TC 278: Road Transport and Traffic Telematics (RTTT)
 - current priorities
 - RDS-TMC (Radio Data System - Traffic Message Channel)
 - Electronic Fee Collection (EFC)
 - Traffic Data Exchange (e.g. DATEX)
 - Human/Machine Interface

References

<http://www.cen.eu/cen/Sectors/Sectors/TransportAndPackaging/Roadtransport/Pages/RTTT.aspx>





UNECE

United Nations Economic Commission for Europe

- Emerging statistical needs
 - Indicators on safety, congestion
 - Emissions (GHG, pollution, noise)
 - Co-modality, intermodality, logistics and performance indicators
 - Road traffic and passenger transport, i.e. in urban areas
- Ongoing work (➔ **Eurostat**)
 - structural indicators, sustainable development indicators, modal split indicators, ...
 - Community data collection on road traffic data (road VKm) with a focus on GHG emissions
 - Dissemination of Community transport statistics



Is Germany a different issue?

Mobility Data

- big recurrent surveys
 - Mobility in Germany (MiD)
 - Car traffic in Germany (KiD)
 - Mobility Panel (MOP)
 - Mobility in Cities (SrV)

➤ Clearing House at DLR

Traffic Flow Data

- Collected by authorities and private companies
- Good coverage on federal roads
- Main sources:
 - inductive loops
 - IR
 - FCD

➤ MDM

Traffic Data in Outer Space?

Transport Research at the German Aerospace Center

Aeronautics

Space Research
and Technology

Transport

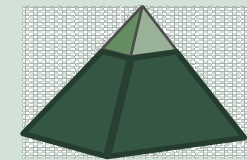
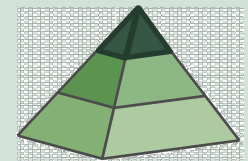
Energy

Space Administration

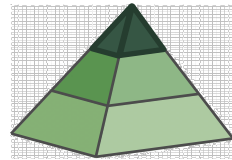
Project Management
Agency

- DLR Institute of Air Transport and Airport Research
- DLR Institute of Vehicle Concepts
- DLR Institute of Communications and Navigation
- DLR Remote Sensing Technology Institute
- DLR Institute of Robotics and Mechatronics
- DLR Institute of Technical Thermodynamics
- DLR Institute of Combustion Technology
- **DLR Institute of Transport Research**
- **DLR Institute of Transportation Systems**
- DLR Simulation- and Software Technology

Berlin-Adlershof



Institute of Transport Research

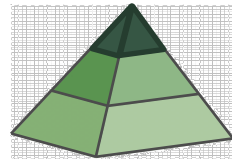


- Residence: Berlin
- Director: Prof. Dr. Barbara Lenz
- Employees: Presently ~30 employees from various scientific disciplines
- Vision
A modern, integrated, socially and ecologically sustainable transport system
- Tasks
Understanding the causality and changes in passenger and commercial transport



Institute of Transport Research

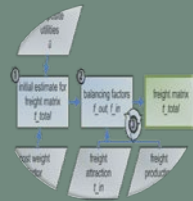
Fields of research



**Passenger
traffic generation
&
travel behaviour**



**e-mobility
&
technology
evaluation**



Modelling



**Commercial
traffic generation
&
logistics**



**Measures
&
environmental
effects**

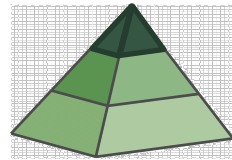
passenger traffic

commercial traffic

Clearing House for Transport Data



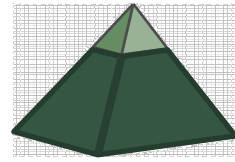
Institute of Transport Research Projects (choice)



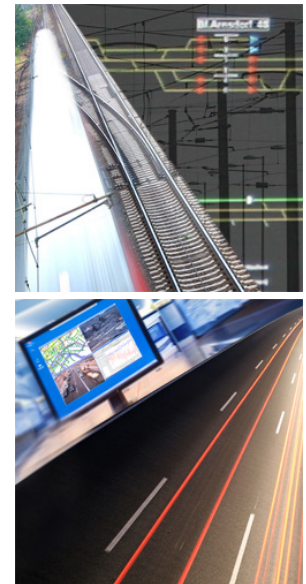
- COFRET and AMITRAN
 - European projects related to traffic impact assessment on CO₂
- e-City Logistics and Fleet Experiment E-Mobility
 - research on e-mobility
- MiD and KiD
 - mobility survey related projects
- Transport Development and the Environment (VEU)
 - from trip generation to traffic assignment, from measures to impacts
- HPA
 - survey fusion, using traditional (manual counts) and modern techniques (GPS logger)
 - connection between traffic and mobility data



Institute of Transportation Systems

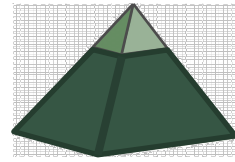


- Residence: Braunschweig and Berlin
- Director: Prof. Dr.-Ing. Karsten Lemmer
- Employees: Presently 120 employees from various scientific disciplines
- Tasks
 - Basic research
 - Creating concepts and strategies
 - Prototype development



Institute of Transportation Systems

Fields of Research



Automotive Systems



Methods / Evaluation

Understanding the driver

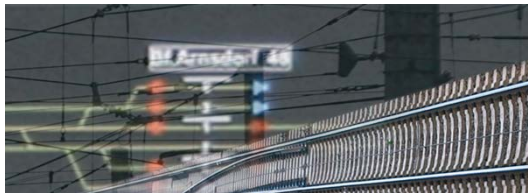
Human factors
engineering & design

Technologies for ADAS

Vehicles

Simulators

Railway Systems



Operation

Life cycle management

Safety and rail human
factors

Technology

Traffic Management



Traffic data recording

Traffic data
management

Traffic simulation und
prediction

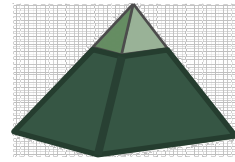
Traffic control and
management

Traffic quality



Institute of Transportation Systems

Data collected and used



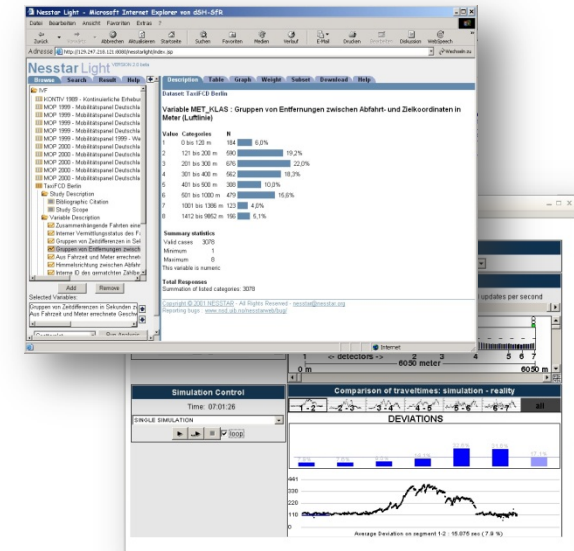
- Database of Floating Car Data (10+ cities, several billion GPS positions)
- Database of loop detector data from our urban test track
- Trajectory data from instrumented vehicles
- Freeway loop data from different projects (freeways Cologne, Munich)



Clearing House Transport & Mobility Overview

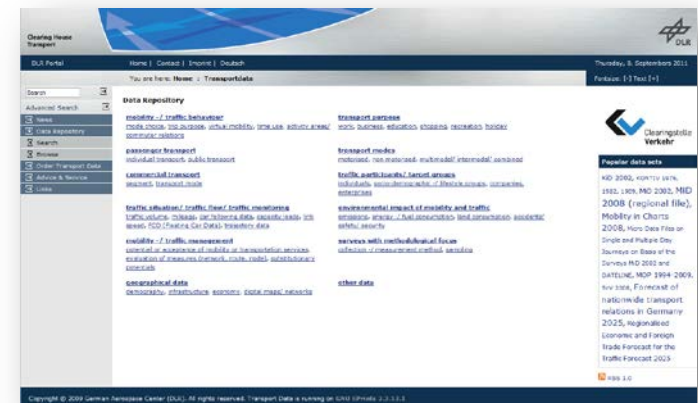


- Est. 2001 as Clearing House for Transport Data and Models
- Motivation
 - Scientific (Data) Exchange on Transport Research Sector
 - Official provider of German Ministry of Transportation's data sets (non-commercial usage purposes)
- Geographic focus
Germany
- Content
 - META information and partly raw data
 - Original content:
 - Traffic Flow Models
 - Surveys and Studies analysis
 - Road side observations
 - Cross-Sections and Counts



Clearing House Transport & Mobility Outlook

- No Models (too diverse and too challenging)
- No Technical Data (too many competitors and too dynamic)
- Data Focus
Mobility Surveys and Studies
- Geographic Focus
Germany → Europe → ?
- Creation and cultivation of international and interdisciplinary networks and cooperation

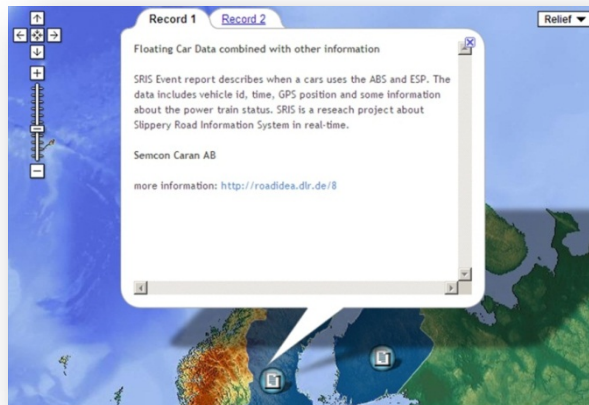


Clearing House Transport & Mobility

Current state



- Technical re-engineering ongoing (Relaunch fall 2011)
 - New forms for data set and portal description implemented as **Eprints archives**
 - Advanced data set **visualisations** (Maps) and **portal linkage** (Mindmaps á la TheBrain)
 - Newsletter, paper and articles



References

<http://www.dlr.de/cs/en/>
Rene.Kelpin@dlr.de



Data issues in Europe

Any questions?

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